Dense Non–Aqueous Phase Liquid Investigation OMC Plant 2 (Operable Unit 4), Waukegan, Illinois WA No. 018-RICO-0528, Contract No. EP-S5-06-01

PREPARED FOR: USEPA

PREPARED BY: CH2M HILL

DATE: March 1, 2007

Introduction

This memorandum documents the field activities associated with the dense non–aqueous phase liquid (DNAPL) investigation conducted as part of the pilot testing of in situ remedial technologies for the groundwater remedy at the Outboard Marine Corporation Plant 2 (OMC Plant 2) in Waukegan, Illinois.

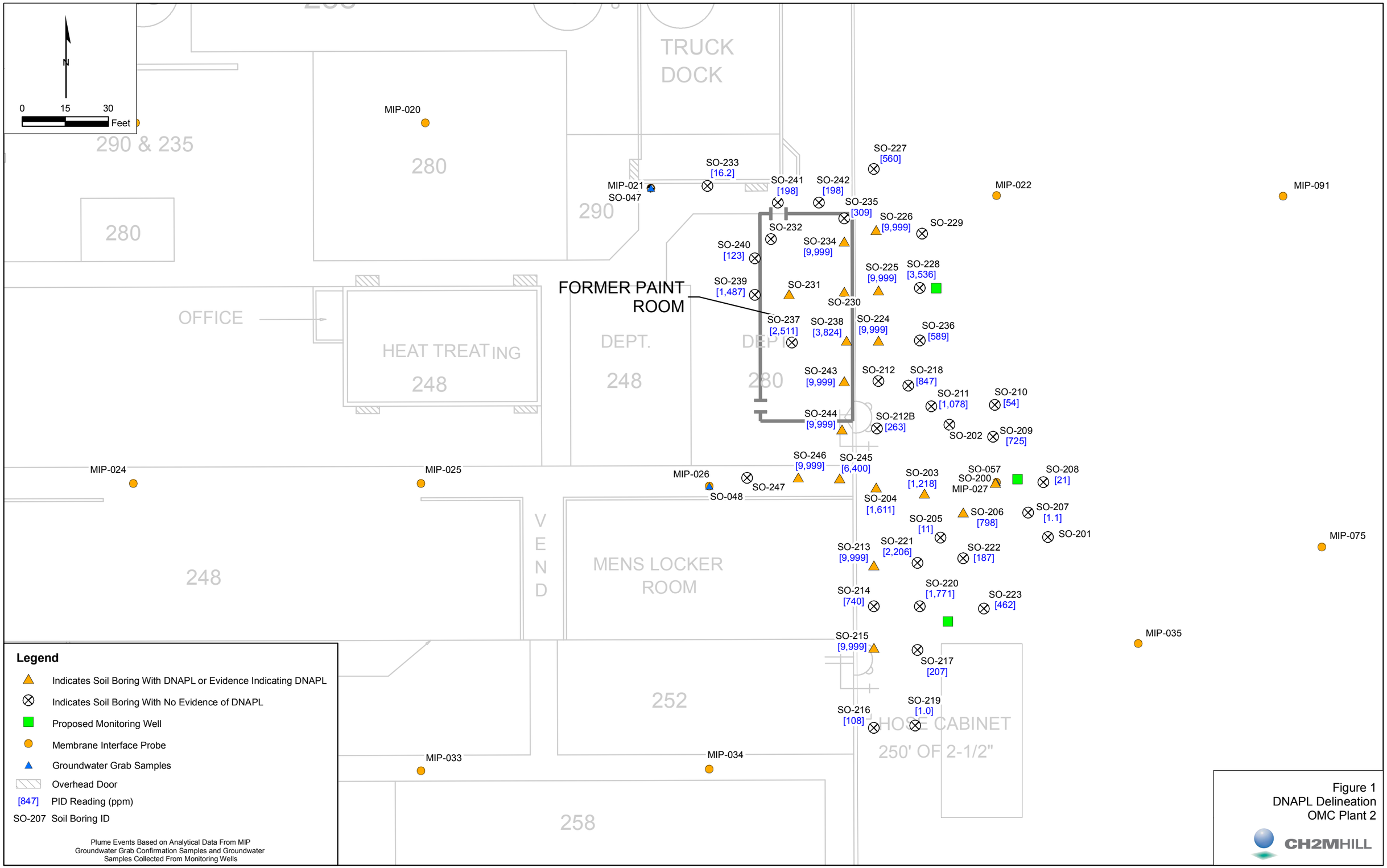
A membrane interface probe (MIP) investigation conducted during the remedial investigation (RI) identified DNAPL at a location outside the plant in the courtyard north of the trim building just east of the die cast area at MIP-027. Two soil borings (SO-026 and SO-057) were completed in that area. DNAPL was encountered at one location (MIP-027/SO-057) consisting of 1,600 grams per kilogram (g/kg) of trichloroethene (TCE). The extent of the DNAPL was investigated by advancing four additional direct-push offset locations within a 50-foot radius of MIP-027/SO-057. There was no visual evidence of DNAPL at any of the offset locations.

Because of the presence of DNAPL, a pilot test program was designed to determine if in situ soil mixing using a chemical reducing agent would provide effective treatment of the DNAPL. The area around MIP-027/SO-057 was targeted for the soil mixing pilot testing (Figure 1).

This DNAPL investigation was implemented to define the horizontal and vertical extent and thickness of the DNAPL and to collect soil, groundwater, and DNAPL samples for bench testing to design the soil mixing pilot test. Representative samples were submitted to Colorado State University to perform a bench test to optimize the effectiveness of in situ soil mixing. The DNAPL investigation was conducted between November 8 and December 21, 2006.

This memorandum contains the following:

- Description of field activities performed, including locations, methods, and deviations from site-specific plans
- Summary table of sample locations, depths, field measurements, and observations
- Boring logs describing materials encountered at each location



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Field Activities

The DNAPL investigation, described in the *Supplemental Field Sampling Plan* (SFSP; CH2M HILL, 2006), focused on the area outside the building where DNAPL was identified during the RI. The field activities and their specific objectives include:

- Defining areal extent of soils potentially contaminated with DNAPL
- Characterizing the lithologic properties of site soils
- Collecting DNAPL and soil samples for bench scale testing

Soil and Groundwater Sampling

A limited subsurface investigation using direct-push technology (DPT) methods (e.g., Geoprobe®) was conducted by Innovative Probing Solutions (IPS) of Mt. Vernon, Illinois. The focused investigation included advancing 48 borings to the base of the aquifer, with 30 in the parking lot outside the building (SO-200 through SO-229) and 18 in the former paint room and vicinity (SO-230 through SO-247). Continuous soil samples were collected from the ground surface to the top of the till (that is, to a depth of roughly 30 feet below ground). Boring SO-200 was installed at the original RI location (MIP027/SO-057) to verify the presence DNAPL encountered during the RI. Eight more soil borings were installed in a radial pattern, 25 feet from boring SO-200.

Offset boring locations were advanced at 10- to 25-foot increments based on the presence or absence of DNAPL in the soil samples as determined by visual observations and total organic vapor measurements. Initially, a groundwater grab sample was to be collected at each boring location to visually examine for the presence of DNAPL. However, to streamline the delineation process, the presence or absence of DNAPL was evaluated based on elevated organic vapor meter (OVM) readings measured during the field screening procedure, i.e. a step-out boring was deemed necessary if a maximum OVM reading of > 9,999 ppm was measured from the soil sample. Figure 1 illustrates the extent of the DNAPL investigation. Table 1 lists the soil borings.

Soil Sampling Procedures. Soils at each location were continuously sampled using a Geoprobe macrocore sampler with a disposable acetate liner from ground surface to the top of the till, as indicated by direct-push refusal.

The soil samples were logged using ASTM D-2487, Unified Soil Classification System. Observations during sampling activities, including OVM readings, soil staining, odors, and sheen, were also noted on the soil boring logs. Soil samples sent to Colorado State University for bench testing were not logged by CH2M HILL staff, with the exception of the interval that represents the top of the till. Soil samples where ground water grab samples were collected were not logged; however, boring SO-203 was re-advanced and logged from 24 to 27.7 feet. Soil samples were not collected for laboratory analysis. Boring location coordinates (northing and easting) were determined by measuring the position from known survey locations with a measuring tape and plotting in a geographical information system. The soil boring logs are included in Attachment 1.

The soil samples were logged, field screened using an OVM and examined for visual indications of mobile or residual DNAPL. Samples were not collected for laboratory analysis. The sampling procedures and equipment applicable to these activities were

TABLE 1
Summary of DNAPL Area Investigation
OMC Plant 2

Boring ID	Date Completed	Depth to Till (ft)	End of Boring (EOB)	Comments/Significant Observations
SO-200	11/21/2006	NA	32	collected groundwater grab sample; slight sheen visible; DNAPL not observed
SO-200A	11/27/2006	28	28	
SO-201	11/21/2006	NA	32	collected groundwater grab sample; DNAPL not observed
SO-202	11/22/2006	27.5	28	collected groundwater grab sample; purge water had strong odor; DNAPL not observed
SO-203	11/22/2006 & 11/28/2006	~26.5	27.7	8 oz. DNAPL sample collected; DNAPL is amber-colored, moderately viscous with a strong odor
SO-204	11/28/2006	~26.5	27.7	
SO-205	11/28/2006	~26.5	28	
SO-206	11/29/2006	26.7	27	DNAPL observed @ 24-28' interval
SO-207	11/29/2006	25.5	26.5	
SO-208	11/30/2006	26	26.3	
SO-209	11/30/2006	25.5	26	
SO-210	12/5/2006	25	26	
SO-211	12/5/2006	25.6	25.9	
SO-212B	12/5/2006	NA	25.8	
SO-213	12/6/2006	25.5	26	PID >9999 ppm @ 24-28' interval
SO-214	12/6/2006	26.2	26.5	
SO-215	12/6/2006	26.5	27	PID >9999 ppm @ 24-28' interval
SO-216	12/6/2006	24.5	27.5	
SO-217	12/8/2006	25	26.8	
SO-218	12/8/2006	26	26	
SO-219	12/11/2006	25.4	26.6	
SO-220	12/11/2006	25.6	26.2	
SO-221	12/12/2006	25.9	26.2	
SO-222	12/12/2006	25.4	26.8	
SO-223	12/13/2006	24.8	26.3	
SO-224	12/13/2006	25.4	25.9	PID >9999 ppm @ 20-24' interval; strong odor and sheen at 23' bgs
SO-225	12/13/2006	28.7	31.5	PID >9999 ppm @ 28-32' interval; sheen; liner stained pale green from 31-32' interval
SO-226	13/14/2006	25.95	26.2	PID >9999 ppm @ 20' interval, sheen
SO-227	12/14/2006	25.9	26.5	
SO-228	12/14/2006	26.4	27	
SO-229	12/15/2006	26	28	
SO-230	12/15/2006	29	30.5	PID >9999 ppm @ 20-26' interval
SO-231	12/15/2006	28.75	30.5	PID >9999 ppm @ 24-26' interval
SO-232	12/18/2006	NA	7	Refusal at 7'
SO-233	12/18/2006	30	30	
SO-234	12/18/2006	29	30	PID >9999 ppm @ 16-21' interval
SO-235	12/18/2006	30.5	30.5	
SO-236	12/19/2006	27	27	
SO-237	12/19/2006	29	29.2	
SO-238	12/19/2006	29.5	29.5	
SO-239	12/20/2006	29.6	29.8	
SO-240	12/20/2006	29.5	30.2	
SO-241	12/20/2006	29	29.5	
SO-242	12/20/2006	29.5	29.6	
SO-243	12/21/2006	29.5	29.9	PID >9999 ppm @ 26' interval
SO-244	12/21/2006	29.3	29.3	PID >9999 ppm @ 26' interval
SO-245	12/21/2006	29.7	30	
SO-246	12/21/2006	29.6	30	PID >9999 ppm @ 26' interval
SO-247	12/21/2006	29.4	29.6	

NA - not available

conducted in accordance with the Field Operating Procedures included in the November 2004 *Field Sampling Plan* (FSP; CH2M HILL, 2004a).

Groundwater and DNAPL Sampling Procedures. Discrete groundwater samples were collected from boring locations SO-200 through SO-203 to evaluate for the presence of mobile or residual DNAPL. The borings were not sampled but were advanced in the subsurface until boring refusal at the till boundary. A screen point sampler was then exposed to enable the collection of groundwater grab samples from the base of the aquifer using disposable tubing with a ball and check valve.

DNAPL Sampling Procedures. An amber-colored DNAPL with an oily appearance was observed in the groundwater grab sample from boring SO-203. DNAPL was collected from boring location SO-203 using the same method as the groundwater; however, the sample was decanted to remove water and sediment. An 8-ounce DNAPL sample was sent to Colorado State University for use in the bench scale testing.

Decontamination and Investigation-Derived Waste Procedures. Sampling equipment was decontaminated in accordance with FOP-17, *Decontamination of Drilling Rigs and Equipment*. The solid and liquid IDW generated during the fieldwork were containerized and will be sampled, characterized, and disposed of following the completion of the pilot test activities and in accordance with *Investigation-Derived Waste Management Plan* (CH2M HILL 2004b).

Monitoring Well Installation

Based on the extent of DNAPL observed in the area, three monitoring well locations were identified to monitor changes in groundwater quality resulting from soil mixing activities. Each well nest consists of a shallow well installed at the water table (well depth of 15 feet) and a deep well installed at the top of the till (well depth of about 30 feet). The 2-inch monitoring wells were installed using hollow-stem auger techniques, constructed of polyvinyl chloride casing and stainless steel well screens, and developed following the same procedures as for the RI monitoring wells. The new monitoring wells will be included in the overall baseline groundwater sampling event and with the post-injection performance monitoring program for enhanced in situ bioremediation. A hydrogeologic investigation summary report will summarize the monitoring well installation activities.

References

ASTM Method D-2487.

CH2M HILL. 2006. Supplemental *Field Sampling Plan, OMC Plant 2, Waukegan, Illinois, Final*. December.

CH2M HILL. 2004a. *Field Sampling Plan, OMC Plant 2, Waukegan, Illinois*. November.

CH2M HILL. 2004b. *Investigation-Derived Waste Management Plan*. September.

Attachment 1

Soil Boring Logs
OMC Plant 2—Geological Investigations

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-203	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' W of MIP-027

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 11/27/06 FINISH: 11/28/06 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1						0-12 ft bgs Not Sampled	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13	12'-16'	1	3.6/4.0				
14							
15							
16							
17	16'-20'	2	3.6/4.0				
18							
19							
20							
21	20'-24'	3	3.6/4.0				
22							
23							
24							
25	24'-28'	4	3.7/4.0		24.0 ft bgs - Silty fine Sand (SM), gray, grain size decreases with depth, wet.	Strong solvent odor.	1,218
26							1,100
27							687
28							548
29					**EOB @27.7 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-204	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' W of SO-203

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 11/28/2006 FINISH: 11/28/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4.0				
2							
3							
4							
5	4'-8'	2	3.4/4.0				
6							
7							
8							
9	8'-12'	3	4.0/4.0				
10							
11							
12							
13	12'-16'	4	3.7/4.0				
14							
15							
16							
17	16'-20'	5	3.5/4.0				
18							
19							
20							
21	20'-24'	6	3.6/4.0				
22							
23							
24							
25	24'-28'	7	3.7/4.0		24.0 ft bgs - Fine Sand with some Silt (SM), gray/brown, trace rounded pebbles present, wet.	Strong solvent odor.	167 321
26							667
27							309
28							1,611
29					**EOB @27.7 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-205	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' SW of MIP-027

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.75 ft bgs START: 11/28/2006 FINISH: 11/28/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID Reading (ppm)
1	0'-4'	1	3.0/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" quartz gravel.	0.4
2						0.6
3					1.25 ft bgs - Fine Sand (SP), gray/brown, moist, trace 0.25" to 1" rounded gravel.	0.2
4					2.0 ft bgs - no gravel, light brown.	0.6
5	4'-8'	2	4.0/4.0		4.5 ft bgs - dark brown, trace 0.25" rounded gravel. 4.75 ft bgs - fine to medium sand, light brown, wet, firm, micaceous.	0.2 Groundwater @ 4.75 ft bgs
6					5.0 ft bgs - 3" layer of 0.5" to 1" subrounded gravel, decreasing medium sand with depth.	0.3
7						0.5
8						0.4
9	8'-12'	3	2.8/4.0			0.5
10					9.0 ft bgs - fine to medium sand, 0.5" to 1" subrounded to rounded gravel.	2.0
11						5
12						0.5
13	12'-16'	4	3.5/4.0			0.4
14						0.3
15						0.6
16						1.2 0.6
17	16'-20'	5	3.5/4.0		16.0 ft bgs - 0.125" to 0.5" subrounded gravel.	0.8
18						1.2
19						0.8
20					19.25 ft bgs - Silty fine Sand (SM), light gray, wet, firm to hard.	0.7 0.3
21	20'-24'	6	3.5/4.0			9.6
22					21.0 ft bgs - dark gray.	5.7 224
23						190
24						194 110
25	24'-28'	7	3.5/4.0		24.0 ft bgs - gray/brown, pebbles present in lower 0.5' of section, silt concentration increases and color becomes more gray with depth.	10.5
26						7.5
27						6
28						6
29					**EOB @27.5 ft bgs**	
30						

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PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-206	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' NE of SO-205

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 6.0 ft bgs START: 11/28/2006 FINISH: 11/29/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4.0				
2							
3							
4							
5	4'-8'	2	3.8/4.0				
6							
7					6.0 ft bgs - Fine to medium Sand (SP), light brown, wet, micaceous, trace 0.25" to 0.5" subrounded gravel.	Groundwater @ 6.0 ft bgs	1.1
8							18 4.3
9	8'-12'	3	3.5/4.0				14
10							
11							
12							
13	12'-16'	4	2.3/4.0				1.1 1.9 2.2
14							
15							1.2
16							
17	16'-20'	5	3.0/4.0				
18							
19							0.9
20					19.0 ft bgs - fine to coarse sand, light-dark brown, wet, 0.125" to 1" subrounded gravel.		0.8
21	20'-24'	6	3.0/4.0				
22					21.5 ft bgs - Silty fine Sand (SM), light gray, wet, micaceous.		5.2
23							24.8
24							22
25	24'-28'	7	3.0/4.0		24.0 ft bgs - gray/brown.	Strong solvent odor.	282 798
26							
27					26.7 ft bgs - Clay Till (CL), gray, hard, with limestone pebbles.		398 447
28							
29					**EOB @27.0 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-207	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E of SO-200

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 11/29/2006 FINISH: 11/29/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.8/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.1
2					1.25 ft bgs - Fine Sand (SP), light gray/brown, moist, firm, micaceous, 0.125" to 0.5" subrounded gravel.		1.2
3					2.5 ft bgs - 4" layer of fine to coarse sand with 0.25" to 1" rounded gravel, light-dark brown, wet firm.		1.5
4							0.9
5	4'-8'	2	3.2/4.0				1.3
6					5.0 ft bgs - light brown, wet.	Groundwater @ 5.0 ft bgs	1.2
7							1.1
8							5 1.1
9	8'-12'	3	3.7/4.0				3.6
10							18.9
11							4.6
12							6.1
13	12'-16'	4	3.4/4.0				2.1 4.6
14							4.3
15							1.1 1.1
16							1
17	16'-20'	5	3.5/4.0				1.8
18					17.0 ft bgs - fine to coarse sand, light gray.		2 1.9
19					18.75 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		1.5
20							1.4
21	20'-24'	6	3.5/4.0				3.8
22							3.3
23							3
24							1.3 1
25	24'-28'	7	2.5/4.0		24.0 ft bgs gray, small (0.5-1 cm) shells present		1.1
26					25.4 ft bgs - angular limestone pebbles. 25.5 ft bgs - Clay Till (CL), gray, hard.		0.7 0.6
27							
28					**EOB @26.5 ft bgs**		
29							
30							

CH2MHILL	PROJECT NUMBER 348136.TT.01	BORING NUMBER SO-208	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E of SO-200

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.5 ft bgs START: 11/29/2006 FINISH: 11/30/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.5/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.125" to 1" gravel.		0
2					1.0 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, trace 0.25" to 0.5" subrounded gravel.		0
3							0
4					4.3 ft bgs 3" layer of 0.125" to 0.25 " rounded gravel.		0
5	4'-8'	2	3.4/4		5.25 ft bgs - 2" layer of coarse sand.		2.5
6					5.5 ft bgs - wet.	Groundwater @ 5.5 ft bgs	0.1
7							1.5
8					7.0 ft bgs - 3" layer of 1 to 2 mm laminations in fine sand, alternating black and light brown.		2
9	8'-12'	3	3.8/4				1.5
10							4
11							3.7
12							13
13	12'-16'	4	2.5/4				6.1
14							3.2
15					14.0 ft bgs - 1" layer of clayey silt, dark gray, wet, soft bgs		0.5
16							0.3
17	16'-20'	5	2.4/4				0.5
18							0.7
19					18.25 ft bgs - 3" layer of organic soil (possibly peat), black, wood fibers and grasses.		0.2
20					18.5 ft bgs - Silty fine Sand (SM), light gray, wet, firm to hard, micaceous.		0.1
21	20'-24'	6	2.4/4				0.3
22							0.2
23							0.2
24							0.1
25	24'-28'	7	2.3/4		24.0 ft bgs - brown/gray.	Moderate solvent odor.	2.1
26					25.9 ft bgs - angular limestone fragments (0.75" to 1.5").		7.8
27					26.0 ft bgs - Clay Till (CL), gray, hard, with 0.25" to 1" gravel.		21.1
28							3.3
29					**EOB @26.3 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-209	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 14' N of SO-200

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 11/30/2006 FINISH: 11/30/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.125" to 0.5" gravel.		0
2					1.25 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, trace 0.25" to 1" subrounded gravel.		0
3							0.5
4							0.8
5	4'-8'	2	3.8/4		4.0 ft bgs - wet.	Groundwater @ 4.0 ft bgs	2.3
6							0.4
7							3.2
8							0.8
9	8'-12'	3	2.5/4		7.5 ft bgs - 3" layer of 1 to 2 mm laminations in fine sand, alternating black and light brown.		70.7
10							34
11							25.5
12							27.3
13	12'-16'	4	2.5/4				66
14							78.1
15							76.5
16							130
17	16'-20'	5	2.5/4		16.75 ft bgs - 4" layer of gravelly sand, fine to coarse sand, 0.125" to 0.25" rounded gravel, dark gray and light brown.		60.6
18							29.2
19							5.5
20							25.1
21	20'-24'	6	1.8/4		20.0 ft bgs - Silty fine Sand (SM), light gray, firm to hard, wet.		4.3
22							11.7
23							2.1
24							0.9
25	24'-28'	7	2.0/4		24.0 ft bgs - gray-brown. 25.4 ft bgs - angular gravel. 25.5 ft bgs - Clay Till (CL), gray, hard, with 0.125" to 1" gravel.	Strong solvent odor.	9.2
26							0.5
27							1.1
28							7.1
29					**EOB @26 ft bgs**		19.1
30							725
							211

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-210	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' N of SO-200

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/4/2006 FINISH: 12/5/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.125" to 1" gravel.		0
2					1.5 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, trace 0.25" to 0.5" subrounded gravel.		0
3							0.9
4							0.4
5	4'-8'	2	3.8/4		4.0 ft bgs - wet.	Groundwater @ 4.0 ft bgs	1.1
6							3.9
7							2
8					7.0 ft bgs - 4" layer of 0.25" to 1" rounded gravel, some coarse sand.		26.7
9	8'-12'	3	2.5/4				39
10							20.7
11							48.3
12							33.6
13	12'-16'	4	2.3/4				69.7
14							110
15							39.4
16							44.3
17	16'-20'	5	2.4/4		16.0 ft bgs - sand size increasing (fine to coarse sand).		57
18					17.0 ft bgs - fine sand.		243
19							142
20							110
21	20'-24'	6	2.1/4		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		4.6
22							45.5
23							22.2
24							0.8
25	24'-28'	7	2.0/4		24.0 ft bgs - brownish gray, 0.25" to 1" rounded gravel,		2.9
26					25.0 ft bgs - Clay Till (CL), gray, hard.		22.2
27							28.7
28							54
29					**EOB @26.0 ft bgs**		12
30							8

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-211	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 35' NW of SO-200

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 6.0 ft bgs START: 12/4/2006 FINISH: 12/5/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.6/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.5
2					1.5 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, trace 0.25" to 1" subrounded gravel.		0.6
3							0.5
4							0.5
5	4'-8'	2	3.2/4				
6							
7					6.0 ft bgs - wet.	Groundwater @ 6.0 ft bgs	4.5
8							7
9	8'-12'	3	3.0/4				5.1
10							68.9
11							154
12							238
13	12'-16'	4	2.3/4				127
14							
15							
16							
17	16'-20'	5	2.5/4				68.6
18					17.0 ft bgs - trace silt, increasing silt with depth.		222
19							126
20							
21	20'-24'	6	2.2/4				
22							
23							
24							
25	24'-28'	7	1.9/4		24.0 ft bgs - Silty fine Sand (SM), brownish-gray, wet, hard.	Strong solvent odor.	179
26					25.5 ft bgs - angular gravel with course sand. 25.6 ft bgs - Clay Till (CL), gray, hard.		208 1,078
27							
28							
29					**EOB @25.9 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-212b	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 23' NW of SO-211

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/5/2006 FINISH: 12/5/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.3/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.5
2					1.5 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, trace 0.25" to 0.5" subrounded gravel.		0.3
3							0.2
4							0.3
5	4'-8'	2	3.2/4		4.0 ft bgs - dark brown, wet.	Groundwater @ 4.0 ft bgs	0.3
6					4.5 ft bgs - 6" layer of gravelly sand, 0.25" to 0.5" subrounded gravel, fine to coarse sand.		0.3
7					5.0 ft bgs - light brown.		0.6
8							0.3
9	8'-12'	3	2.5/4				0.3
10							0.4
11							5.4
12							1.7
13	12'-16'	4	2.4/4				12.3
14							57.4
15							20.9
16							67
17	16'-20'	5	2.2/4				24
18					17.0 ft bgs - no gravel.		22.3
19							90.9
20							55.5
21	20'-24'	6	2.2/4		20.0 ft bgs - Silty fine Sand (SM), dark gray, wet, hard.		453
22							122
23							85/523
24							128
25	24'-28'	7	1.8/4		24.0 ft bgs - grayish-brown, damp.		166
26					25.5 ft bgs - 2" layer of fractured rock, black, hard.		198
27						0.5" steel splinter found in bottom inch of core.	60/424
28							815
29					**EOB @25.8 ft bgs**		263
30							168
							212

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-213	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' S of SO-204 (8' E of building wall)

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/5/2006 FINISH: 12/6/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4				
2							
3							
4							
5	4'-8'	2	3.8/4				
6							
7							
8							
9	8'-12'	3	2.5/4				
10							
11							
12							
13	12'-16'	4	2.3/4				
14							
15							
16							1.3
17	16'-20'	5	2.7/4				
18							
19							
20							
21	20'-24'	6	2.5/4				
22							
23							
24							
25	24'-28'	7	2.0/4		24.0 ft bgs - Silty fine Sand (SM), brown/gray, damp, grain size decreases with depth.		60
26					25.25 ft bgs - angular limestone gravel. 25.5 ft bgs - Clay Till (CL), gray, hard.	Very strong solvent odor.	133 9,999
27							
28							
29					**EOB @26.0 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-214	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' S of SO-213

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.5 ft bgs START: 12/6/2006 FINISH: 12/6/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.3/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.6
2					1.25 ft bgs - Fine to medium Sand (SP), black/brown, moist, firm, micaceous, trace 0.25" to 1" subrounded gravel.		0.3
3							0.3
4							0.4
5	4'-8'	2	3.4/4				0.4
6					5.5 ft bgs - black/gray, wet.	Groundwater @ 5.5 ft bgs	0.4
7					6.0 ft bgs - 2" organic soil layer (possibly peat), 6.1 ft bgs - gray.		0.7
8					6.25 ft bgs - light brown.		13.4
9	8'-12'	3	2.5/4				5.4
10							8.3
11							6.3
12							7.5
13	12'-16'	4	2.5/4				8.8
14							15.2
15							30.9
16							20.7
17	16'-20'	5	2.3/4				36.6
18							6.1
19					18 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		4
20							3.1
21	20'-24'	6	2.0/4				3.6
22							4.4
23							6.3
24							1.1
25	24'-28'	7	2.5/4		24.0 ft bgs - brown/gray.	Strong solvent odor.	207
26					26.0 ft bgs - coarse sand and angular gravel, black/brown. 26.2 ft bgs - Clay Till (CL), gray, hard.		740
27							717
28					**EOB @26.5 ft bgs**		55.1
29							98.1
30							44.9

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-215	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' S of SO-214

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/6/2006 FINISH: 12/6/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID Reading (ppm)
1	0'-4'	1	2.0/4			
2						
3						
4						
5	4'-8'	2	2.8/4			
6						
7						
8						
9	8'-12'	3	2.5/4			
10						
11						
12						
13	12'-16'	4	2.5/4			
14						
15						
16						
17	16'-20'	5	2.3/4			
18						
19						
20						
21	20'-24'	6	2.7/4			
22						
23						
24						
25	24'-28'	7	3.0/4		24.0 ft bgs - Silty fine Sand (SM), brown/gray, damp.	Very strong solvent odor. Oil sheen obsderved on outside of core. 9999
26						4519
27					26.5 ft bgs - Clay Till (CL), gray, hard. Top 6" of till contains a higher percentage of gravel.	PID in breathing space (1 m from core) ~20 ppm
28						
29					**EOB @27.0 ft bgs**	
30						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-216	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' S of SO-215

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/6/2006 FINISH: 12/6/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.9/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		6.8
2					1.25 ft bgs - 2" layer of organic soil, dry, hard, 0.25" rounded gravel.		1.9
3					1.3 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, micaceous, some 0.25" to 0.5" subrounded gravel.		0.6
4							1.9
5	4'-8'	2	3.5/4		4.0 ft bgs - wet.	Groundwater @ 4.0 ft bgs	1.3
6					5.0 ft bgs - fine to coarse sand, gray/brown, trace gravel.		1.1
7					6.25 ft bgs - fine to medium sand.		1.4
8							4.1
9	8'-12'	3	2.4/5				1.1
10							2.1
11							26.1
12							18.9
13	12'-16'	4	2.5/4				20.2
14							18.1
15					14.0 ft bgs - trace 0.25" to 1 " subrounded gravel.		3.8
16							2.2
17	16'-20'	5	2.5/4				0.6
18							1.9
19					18.0 ft bgs - 1" layer of clay, dark gray, soft bgs, wet.		21.6
20					18.1 ft bgs - dark gray.		18.9
21	20'-24'	6	2.5/4		20.0 ft bgs - Silty fine Sand (SM), dark gray, wet, hard.		4.4
22							1.4
23							1.2
24							2
25	24'-28'	7	3.5/5		24.5 ft bgs - Clay Till (CL) and gravel (0.25" - 1"), gray, hard	No odor.	1.2
26							2.5
27							143
28							155
29							59.4
30							102
					24.0 ft bgs - brown/gray.		16.1
					EOB @27.5 ft bgs		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-217	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E of SO-215

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/8/2006 FINISH: 12/8/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.6
2					1.5 ft bgs - Fine to medium Sand (SP), dark gray/brown, moist, firm, micaceous, some 0.25" to 1" subrounded gravel.		0.5
3					2.6 ft bgs - light brown.		0.5
4							0.4
5	4'-8'	2	3.2/4		4.0 ft bgs - dark gray/brown, wet.	Groundwater @ 4.0 ft bgs	0.5
6							0.4
7					6.0 ft bgs - 3" layer of organic soil, degraded and matted grass, black, wet.		0.4
8					6.25 ft bgs - tracce 0.25" to 0.5" subrounded gravel.		1.9
9	8'-12'	3	1.8/4				1.6
10							3.9
11							3.5
12							
13	12'-16'	4	2.4/4				4.2
14							5.2
15							2.2
16							1.8
17	16'-20'	5	2.3/4			Geoprobe operator reports odor around boring. PID reading 0.3 ppm in breathing area.	1
18							0.7
19							0.7
20							0.4
21	20'-24'	6	2.5/4		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		2
22							7
23							39
24							150
25	24'-28'	7	2.8/4		24.0 ft bgs - grayish brown. 24.8 ft bgs - course angular gravel.		903
26					25.0 ft bgs - Clay Till (CL), gray, hard.	No odor	207
27							29
28					**EOB @26.8 ft bgs**		
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-218	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' NW of SO-211

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 12/8/2006 FINISH: 12/8/2006 LOGGER: **K. Davis / I. Mueller**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.4
2					1.25 ft bgs - Fine to medium Sand (SP), gray/brown, moist, firm, micaceous, some 0.25" to 0.5" subrounded gravel.		0.3
3							0.3
4							0.3
5	4'-8'	2	3.4/4				0.5
6					5.0 ft bgs - trace 0.25" to 1" rounded gravel, wet.	Groundwater @ 5.0 ft bgs	0.5
7							0.9
8							1.9
9	8'-12'	3	2.4/4				23.3
10							68.1
11							52.5
12							39.1
13	12'-16'	4	3.0/4				148
14							122
15							289
16							155
17	16'-20'	5	2.5/4				1,190
18					17.0 ft bgs - light brown/gray.		392
19							593
20							164
21	20'-24'	6	2.3/4		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		237
22							591
23							1,031
24							488
25	24'-28'	7	2.0/4		24.0 ft bgs - gray/brown, damp.	Moderate solvent odor.	410
26					26.0 ft bgs - Clay Till (CL), gray, hard.		725
27					**EOB @26.0 ft bgs**		847
28							
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-219	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 12/11/2006 FINISH: 12/11/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.5
2					1.5 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, trace 0.25" subrounded gravel.		0.6
3							0.6
4							0.6
5	4'-8'	2	3.8/4.0				0.5
6					5.0 ft bgs - wet.		0.5
7							0.5
8							0.9
9	8'-12'	3	2.75/4.0				0.9
10							2.1
11							6.4
12							3.9
13	12'-16'	4	3.0/4.0				5.6
14					13.0 ft bgs - dark gray.		0.8
15					14.0 ft bgs - light gray/brown.		0.7
16							0.7
17	16'-20'	5	0/4.0				2.1
18							1
19							
20							
21	20'-24'	6	2.2/4.0		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.	No odor.	1.1
22							3.6
23							14.6
24							
25	24'-28'	7	2.6/4.0		24.0 ft bgs - Fine Sand (SP), well-sorted, gray, wet.	No odor.	1
26					24.8 ft bgs - Sand and Gravel (SW), poorly-sorted, gray, wet, subrounded to rounded gravel.		
27					25.4 ft bgs - Clay Till (CL), gray, very stiff, some gravel decreasing with depth.	No odor.	
28					**EOB @26.6 ft bgs**		
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-220	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 12/11/2006 FINISH: 12/11/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.0/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.6
2					1.5 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, trace 0.25" to 0.5" subrounded gravel.	No odor.	0.6
3							0.7
4							0.4
5	4'-8'	2	3.2/4.0				0.5
6					5.0 ft bgs - wet.	Groundwater @ 5.0 ft bgs	0.5
7					6.0 ft bgs - 3" layer of fine to coarse sand with 0.125" round gravel.	No odor.	0.8
8							11.3
9	8'-12'	3	2.5/4.0				21.6
10							14.9
11						No odor.	2.3
12							30.2
13	12'-16'	4	2.0/4.0				35.5
14							15.8
15							5.3
16						No odor.	3
17	16'-20'	5	3.0/4.0				2.4
18							2.7
19							3.6
20							2.7
21	20'-24'	6	2.0/4.0		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.	Very slight odor.	3
22							3.5
23							2.1
24							120
25	24'-28'	7	2.2/4.0		24.0 ft bgs - Fine Sand (SP), well-sorted, tan/brown, wet.	Odor present.	1,212
26					25.0 ft bgs - Sand and Gravel (SW), poorly-sorted, wet.		1,771
27					25.65 ft bgs - Clay Till (CL), gray, very stiff, trace gravel.	No odor.	3
28					**EOB @26.2 ft bgs**		
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-221	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 12/12/2006 FINISH: 12/12/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.6/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.1
2					1.0 ft bgs - Fine to medium Sand (SP), dark brown/gray, moist, firm, trace 0.25" to 1" subrounded gravel.		0.3
3					1.75 ft bgs - light brown.		0.1
4							0.1
5	4'-8'	2	4.0/4.0				0.3
6					5.0 ft bgs - wet.		0.1
7							0.3/0.1
8							3.4
9	8'-12'	3	2.4/4.0				5.5
10							1.3/133
11							87.4
12							27.4
13	12'-16'	4	2.25/4.0				5.6/18.2
14							5.4
15					14.0 ft bgs - trace 0.125" to 1" subrounded gravel.		1.3
16							0.6/0.9
17	16'-20'	5	2.25/4.0				2.7
18							3.1
19							4
20							3.8
21	20'-24'	6	2.5/4.0		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		36.9
22							227
23							137
24						Odor present.	163
25	24'-28'	7	2.2/4.0		24.0 ft bgs - Fine Sand (SP), well-sorted, gray, wet.	Odor present.	2,206
26					25.6 ft bgs - Sand and Gravel (SW).		519
27					25.9 ft bgs - Clay Till (CL).		243
28					**EOB @26.2 ft bgs**		
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-222	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.8 ft bgs START: 12/12/2006 FINISH: 12/12/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.3
2					1.25 ft bgs - Fine to medium Sand (SP), dark brown/gray, moist, firm, trace 0.25" to 1" subrounded gravel.		0.5
3					2.0 ft bgs - light brown.		0.6
4							0.5/0
5	4'-8'	2	4.0/4.0				2.6
6					5.8 ft bgs - fine to coarse sand, wet.		5
7							1.9
8					7.0 ft bgs - fine - medium sand.		3.7
9	8'-12'	3	2.7/4.0				10.5
10							23.9
11							45.7/53.2
12							48.2
13	12'-16'	4	3.25/4.0				62.2
14							49
15							0.5
16							0.8
17	16'-20'	5	2.5/4.0				0.5
18							0.3
19							1.2
20							1.1
21	20'-24'	6	2.7/4.0		20.0 ft bgs - Silty fine Sand (SM), light gray, wet, hard.		1.1
22							0.9
23							0.7
24							1
25	24'-28'	7	2.8/4.0		24.0 ft bgs - Fine Sand (SP), well-sorted, gray, wet.	No odor.	1.2
26					24.8 ft bgs - Sand and Gravel (SW).		0.4
27					25.4 ft bgs - Clay Till (CL), gray, very stiff.		1.3
28					**EOB @26.8 ft bgs**	No odor.	5.7
29							2.8
30							18.7

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-223	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/13/2006 FINISH: 12/13/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.3
2					1.0 ft bgs - Fine to medium Sand (SP), light brown, moist, firm, trace 0.25" subrounded gravel.		0
3							0.3
4							0.3
5	4'-8'	2	4.0/4.0		4.0 ft bgs - wet.	Groundwater @ 4.0 ft bgs	1
6							1.5
7							0
8							0.8
9	8'-12'	3	2.75/4.0				1.1
10							1.3
11							0.6
12							0.8
13	12'-16'	4	2.7/4.0		13.0 ft bgs - grain size decreasing with depth.		0.6
14							4.9
15							15.5
16							0.9
17	16'-20'	5	2.25/4.0				0.5
18							0.5
19					17.0 ft bgs - trace silt, light gray/brown.		0.6
20							0.7
21	20'-24'	6	2.25/4.0		20.0 ft bgs - Silty fine Sand (SM), gray, wet, hard.		1.9
22							0.2
23							0.2
24							1.4
25	24'-28'	7	2.3/4.0		24.0 ft bgs - Fine Sand (SP), well-sorted, wet. 24.5 ft bgs - Sand and Gravel (SW), poorly sorted, wet.		1.5
26					24.8 ft bgs - Clay Till (CL), some sand and gravel, gray, very stiff.		2.8
27					**EOB @26.3 ft bgs**		0.8
28							48
29							12.4
30							462
							42.3

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-224	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 6.0 ft bgs START: 12/13/2006 FINISH: 12/13/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.75/4.0		**Silty Sandy Gravel Fill with some Clay (GM)**, reddish brown, dry, hard, fine to coarse sand, subangular to subrounded 0.25" to 1" gravel.		0.3
2					1.0 ft bgs - Fine to medium Sand (SP), dark brown, moist, firm, trace 0.25" to 1" subrounded gravel.		0.2
3							0.1
4							0.3
5	4'-8'	2	4.0/4.0				0.3
6							32.9
7					6.0 ft bgs - 6" layer of fine to coarse sand with 0.125" to 0.5" subrounded gravel, wet.	Groundwater @ 6.0 ft bgs	6.2
8					7.0 ft bgs - light brown.		8.4
9	8'-12'	3	2.8/4.0				3.4
10							13.8
11							0.2
12							0.3
13	12'-16'	4	2.5/4.0				78.1
14							222
15						Slight sweet odor.	170
16							114
17	16'-20'	5	2.1/4.0				150
18					17.0 ft bgs - trace silt, grain size decreasing with depth.		612
19							297
20							181
21	20'-24'	6	2.3/4.0		20.0 ft bgs - Silty fine Sand (SM), gray, wet, hard.		8.3
22							1,031
23							1,421
24							938
25	24'-28'	7	1.9/4.0		24.0 ft bgs - Fine Sand (SP), gray, well-sorted, wet.	Odor present.	3,479
26					25.35 ft bgs - Sand and Gravel (SW).	PID reading 0.3 ppm in breathing area.	4,329
27					25.4 ft bgs - Clay Till (CL), gray, very stiff.	LEL 0%.	782
28					**EOB @25.9 ft bgs**		484
29						Stong odor and sheen.	9,999
30						Strong odor.	9,015
						Strong odor, no sheen.	604

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-225	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 2.3 ft bgs START: 12/13/2006 FINISH: 12/13/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.6/4.0		**Asphalt and Sand and Gravel**, gray, dry.		
					0.8 ft bgs - Coarse Sand and Gravel (SW), red/brown, moist, poorly sorted.		0
2					1.6 ft bgs - 8" layer of medium sand, trace gravel, gray/brown, moist, moderately sorted.		0
3					2.3 ft bgs - brown, wet.	Groundwater @ 2.3 ft bgs	
4							0.1
5	4'-8'	2	4.0/4.0				1.1
6							
					6.0 ft bgs - Medium Sand with Gravel (SP), brown, wet.	Slight odor.	3.6
7					6.75 ft bgs - trace gravel.		20
8							22
9	8'-12'	3	3.1/4.0		8.75 ft bgs - Medium to coarse Sand with Gravel (SW), brown, wet, poorly sorted.	Slight odor.	26.1
10					9.5 ft bgs - fine to medium sand, trace gravel.	Slight odor.	42.2
11					10.5 ft bgs - medium to coarse sand, some gravel.	Slight odor.	95.1
12							93.9
13	12'-16'	4	2.6/4.0		12.0 ft bgs - Fine Sand (SP), brown, wet, well sorted, trace coarse sand and wood fragments.		100
14							
					14.1 ft bgs - 3" layer of coarse sand with trace gravel, gray, wet.		367
15							
16							
					16.9 ft bgs - 6" layer of medium to coarse sand, gray/brown.		1,095
17	16'-20'	5	2.6/4.0				858
18							1,431
19							3,143
20							
21	20'-24'	6	0.0/4.0				
22							
23							
24							
							810
25	24'-28'	7	2.2/4.0		25.3 ft bgs - Silty Clay (CL), gray, soft bgs	Strong odor. Slight sheen.	4,952
26					25.5 ft bgs - Coarse sand with some fines (SM), gray, wet, poorly sorted.		9,999
27							1,325
28							
					28.0 ft bgs - medium to coarse sand.	Strong odor.	9,999
29	28'-32'	8	3.5/4.0		28.7 ft bgs - Silty Clay Till (CL), gravy very stiff, trace gravel.		9,999
30					29.5 ft bgs - stiff.	Sheen.	
31						Last foot of plastic liner was stained pale green.	9,999
32					**EOB @31.5 ft bgs**		9,999

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-226	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/13/2006 FINISH: 12/14/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.6/4.0		**Asphalt**, gray, dry.	Odor present.	
					0.9 ft bgs - Sand and Gravel (SW), red/brown, moist, poorly sorted.		12.3
2							47.9
					1.7 ft bgs - Medium Sand (SP), brown, moist, trace gravel.	Slight odor.	
3					2.0 ft bgs - dark brown.		27.6
4							
					4.0 ft bgs - Medium to coarse Sand and Gravel (SW),	Odor present.	28.1
5	4'-8'	2	4.0/4.0		brown, wet, poorly sorted.		
							21.2
6							
							15.9
7							
					7.0 ft bgs - Fine to medium Sand (SP), brown, wet,		7.7
8					well sorted.		
							51.7
9	8'-12'	3	2.5/4.0		8.75 ft bgs - Medium to coarse Sand and Gravel (SW),		
					brown, wet.		65.1
10							
							94.8
11							
12							
					12.0 ft bgs - Fine to medium Sand (SP), brown, wet,	Odor present.	386
13	12'-16'	4	2.8/4.0		well sorted.		
					12.8 ft bgs - gray.		286
14					13.0 ft bgs - medium sand, brown.	Slight odor.	
					13.5 ft bgs - interbedded layers of fine to medium sand and	Odor present.	448
15					coarse sand with trace gravel.		
16							
					16.0 ft bgs - fine to medium sand.	Slight odor.	418
17	16'-20'	5	2.25/4.0		16.5 ft bgs - 4" layer of medium to coarse sand, brown, wet,		
					trace gravel.		656
18					16.8 ft bgs - fine sand.	Odor present.	
							1,547
19							
20							
					20.0 ft bgs - fine to medium sand, gray and dark gray (salt a	Slight odor.	9,999
21	20'-24'	6	2.2/4.0		pepper-like appearance).	Slight sheen.	
					20.5 ft bgs - fine sand with some silt.		3,719
22							
							4,661
23							
24							
					24.8 ft bgs - Silt (ML), gray, moist. 25.1 ft bgs - some fine sand.		1,738/2,517
25	24'-28'	7	2.2/4.0		25.5 ft bgs - Clay with coarse Sand (CL), moist, poorly sorted,		
					angular sand	Odor present.	625
26					25.95 ft bgs - Clay till (CL), gray, very stiff, trace very coarse		33.4
					sand and gravel		
27							
					EOB @ 26.2 ft bgs		
28							
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-227	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 2.0 ft bgs START: 12/14/2006 FINISH: 12/14/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.7/4.0		**Asphalt.**	Odor present.	
2					0.75 ft bgs - Sand and Gravel Fill with some fines (GW), red/brown, poorly sorted.		14.1
3					1.4 ft bgs - Fine Sand (SP), brown, moist, well sorted.		
4					2.0 ft bgs - Medium to coarse Sand with gravel (SW), brown, wet.	Groundwater @ 2.0 ft bgs	2.8
5	4'-8'	2	4.0/4.0		4.0 ft bgs - alternating sequence of medium sand with gravel and coarse sand with gravel.	Odor present.	2.1
6							2.3
7							6.3
8					7.0 ft bgs - medium sand, trace gravel.		45.1
9	8'-12'	3	2.8/4.0		8.75 ft bgs - medium to coarse sand with gravel.		27.7
10					9.4 ft bgs - fine to medium sand, moderately sorted, fine lenses of coarse sediment.		206
11							196
12							86
13	12'-16'	4	2.5/4.0		12.0 ft bgs - alternating layers of fine sand and medium to coarse sand with gravel, appears to fine upward, coarse layers have speckled look.		276
14							324
15							407
16							
17	16'-20'	5	2.8/4.0		16.0 ft bgs - Fine Sand (SP), brown, wet.		341
18					16.9 ft bgs - 4" layer of coarse sand, gray/brown, wet, moder to well sorted.	Odor present.	540
19					17.2 ft bgs - fine sand with very fine lenses of speckled medium sand.		192
20							278
21	20'-24'	6	2.75/4.0		20.0 ft bgs - Fine Sand (SP) grading to Sandy Silt (ML), gray, wet, very well sorted, silt retaining water.	Slight odor.	236
22							171
23							86.1
24							227
25	24'-28'	7	2.5/4.0		24.0 ft bgs - Fine Sand (SP), gray, wet, very well sorted.	Slight odor.	
26					25.5 ft bgs - 5" layer of sand and subangular gravel. 25.9 ft bgs - Clay Till (CL), gray, stiff, trace coarse sand.		
27							8
28					**EOB @ 26.5 ft bgs**		
29							
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-228	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E of SO-225

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/14/2006 FINISH: 12/14/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.0/4.0		**Asphalt.**	Odor present.	2.2
2					0.3 ft bgs - Gravel and Sand Fill (GW), red/brown.		1.5
3					0.5 ft bgs - 2" layer of limestone.		2.2
4					0.8 ft bgs - Fine to medium Sand (SP), gray/brown, moist, trace gravel.		
5	4'-8'	2	4.0/4.0		4.0 ft bgs - dark brown, wet.	Odor present.	1
6					5.0 ft bgs - Sand and Gravel (SW), brown, wet, poorly sorted, well rounded.		1.1
7					6.4 ft bgs - medium sand with trace gravel.		1.4
8							2.5
9	8'-12'	3	2.5/4.0				8.4
10					9.5 ft bgs - Sand and Gravel (SW), brown, wet, poorly sorted.		122
11					9.8 ft bgs - Fine to medium sand (SP), brown, wet, well sorted.		153
12						Slight odor.	
13	12'-16'	4	2.5/4.0		12.0 ft bgs - trace gravel.	Odor present.	335
14							412
15							486
16							
17	16'-20'	5	2.25/4.0		16.25 ft bgs - 4" layer of coarse sand with trace gravel, brown/gray, wet, moderately sorted.		588
18					16.6 ft bgs - gray.		1,274
19							1,642
20							
21	20'-24'	6	2.2/4.0		20.0 ft bgs - Fine Sand with some Silt (SP), gray, wet.	Slight odor.	883
22							1,454
23							3.536
24							
25	24'-28'	7	3.0/4.0				2,761
26					25.3 ft bgs - 0.5" layer of clayey silt.		
27					26.0 ft bgs - Sand and Gravel (SW), gray, moist, subrounded to subangular grains.		1,441 436
28					26.4 ft bgs - Clay Till (CL), gray, trace coasre sand, dry-moist, stiff		28.2
29					**EOB @ 27.0 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-229	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E of SO-226

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/14/2006 FINISH: 12/15/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	3.4/4.0		**Asphalt.**	Odor present.	
2					0.6 ft bgs - Gravel and Sand Fill (GW), red/brown.		
3					1.2 ft bgs - Fine to medium Sand (SP), gray/brown, moist, trace gravel.		2.5
4					2.0 ft bgs - dark brown.		2.1
5	4'-8'	2	4.0/4.0		2.4 ft bgs - Medium to coarse Sand and Gravel (SW), brown, very moist.		1.8
6					4.0 ft bgs - medium sand, trace gravel, brown/gray, wet.	Odor present.	5.7
7					5.0 ft bgs - sand and gravel, brown, poorly sorted.		1.8
8							1.9
9	8'-12'	3	2.0/4.0		6.5 ft bgs - medium to coarse sand and gravel, moderately sorted.		3.5
10					8.0 ft bgs - fine to medium sand, well sorted, trace rounded gravel.		12.4/56.6
11							164
12							289
13	12'-16'	4	2.3/4.0		12.0 ft bgs - trace coarse sand.		481
14						Slight odor.	345
15							438
16							
17	16'-20'	5	2.5/4.0		16.0 ft bgs - Fine Sand (SP), gray/brown, wet, trace coarse sand.		1995
18					16.6 ft bgs - 2" layer of medium to coarse sand with trace gravel, gray/brown, wet.		351
19							431
20							
21	20'-24'	6	2.1/4.0		20.0 ft bgs - fine sand with some silt, gray.	Slight odor.	88.1
22							56.2
23							306
24							
25	24'-28'	7	3.0/4.0		24.0 ft bgs - some silty clay stringers.	Slight odor.	386
26							304
27					26.0 ft bgs - Clay Till with Sand and Gravel (CL), gray, stiff, dry-moist, subangular grains.		10.3
28							0.8
29					**EOB @ 28.0 ft bgs**		
30							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-230	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.3 ft bgs START: 12/15/2006 FINISH: 12/15/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	1.75/4.0		**Gravel and Sand Fill (GW)**, red/brown, moist, poorly sorted.	Odor present.	0
2							
3							
4							
5	4'-8'	2	2.0/4.0		4.4 ft bgs - Fine Sand (SP), dark gray, moist, some gravel, moderately sorted.	Odor present.	28.4
6							15.2
7					5.3 ft bgs - Medium to coarse Sand (SW), some gravel, brown, wet, poor to moderately sorted.	Groundwater @ 5.3 ft bgs	11.5
8							
9	8'-12'	3	2.5/4.0		8.0 ft bgs - well rounded 1.5" gravel (granite and quartzite). 8.5 ft bgs - medium sand, well sorted.		19.2 40.4
10					9.5 ft bgs - medium to coarse sand.		
11					10.2 ft bgs - sand and 1" well rounded gravel.		73.4
12							
13	12'-16'	4	2.5/4.0		12.0 ft bgs - medium sand, gray/brown. 12.8 ft bgs - fine to coarse sand. 13.3 ft bgs - coarse sand and gravel.	Slight odor. Odor present.	309 699
14							
15					13.6 ft bgs - Fine Sand (SP), brown, wet, well sorted.		601
16							
17	16'-20'	5	2.2/4.0		16 ft bgs - medium sand. 16.3 ft bgs - fine to medium sand.	Odor present.	1,236
18					16.6 ft bgs - 4" layer of medium to coarse sand with some gravel, brown, wet.		9,541
19					17.0 ft bgs - fine sand.		1,017
20							
21	20'-24'	6	2.0/4.0		20.0 ft bgs - gray. 20.5 ft bgs - 6" layer of medium to coarse sand, dark gray. 21.0 ft bgs -Silty fine Sand (SM), dark gray, wet.	Slight odor. Very strong odor.	9,999 9,999
22							
23							9,999
24							
25	24'-28'	7	2.1/4.0		24.0 - dark gray.	Very strong odor. Sheen.	9,999
26							8,219
27							9,999
28							
29	28'-32'	8	2.5/4.0		28.6 ft bgs - silt with clay, soft bgs to very soft bgs, gray. 29.0 ft bgs - Clay Till (CL), some coarse sand and gravel, very stiff, dry to moist.	Slight odor	4,850 605
30							12.8
31					**EOB @ 30.5 ft bgs**		
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-231	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 6.0 ft bgs START: 12/15/2006 FINISH: 12/15/2006 LOGGER: **E. Molander**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.5/4.0		**Sand and Gravel Fill (GW)**, red/brown, moist, poorly sorted.	Odor present.	24.5
2							83.2
3							73.8
4							62
5	4'-8'	2	3.3/4.0		4.2 ft bgs - Medium Sand (SP), dark gray/brown, moist, trac coarse sand and gravel.	Odor present.	99
6					4.5 ft bgs - moist to wet, some 1" to 1.5" well rounded gravel, moderately sorted.	Groundwater @ 6.0 ft bgs	61.3
7					6.5 ft bgs - Sand and Gravel (SW), poorly sorted, brown.		67.6
8							50.5
9	8'-12'	3	2.5/4.0		8.8 ft bgs - 4" layer of fine to medium sand, brown, well sorted.		44.5
10					9.7 ft bgs - medium to coarse sand, moderate to well sorted.		106
11							
12					12.0 ft bgs - coarse sand with 0.5" gravel		382
13	12'-16'	4	2.1/4.0		12.25 ft bgs - Fine Sand (SP), brown, well sorted, trace gravel.		117
14							212
15							
16							
17	16'-20'	5	2.2/4.0		16.0 ft bgs - 2" layer of medium to coarse sand with some 0.5" gravel		1,441
18							1,360
19							960
20							408
21	20'-24'	6	2.5/4.0		20.0 ft bgs - fine sand grading to silty sand, gray/brown.	Slight odor.	567
22							1,779
23							
24							
25	24'-28'	7	2.5/4.0		24.0 ft bgs - Silty Fine Sand (SM), gray, well sorted, wet.	Odor present.	9,999
26							9,423
27							9,999
28							
29	28'-32'	8	2.5/4.0		28.7 ft bgs - 1" layer of clayey silt, soft bgs, gray.		4,178
30					28.75 ft bgs - Clay Till (CL), gray, dry-moist, stiff, 2" layer of gravel at top of till.		1,975
31							4
32					**EOB @ 30.5 ft bgs**		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-232	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: NW corner of paint-mixing room

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 7.0 ft bgs START: 12/18/2006 FINISH: 12/18/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. PID Reading (ppm)
1	0'-4'	1	2.5/4.0		**Clayey sand (SC)**, gray/brown. 2.0 ft bgs - Medium Sand with Silt (SM), brown/yellow, some gravel.	Odor present. 63
2						Odor present. 115
3						120
4						
5	4'-8'	2	2.5/4.0		4.0 ft bgs - gray/brown, grain size increasing with depth.	Odor present. 145
6						116
7						16
8					**EOB @ 7.0 ft bgs**	Groundwater @ 7.0 ft bgs
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						Slight odor.
22						
23						
24						
25						
26						
27						
28						
29						
30						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-233	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION:

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 6.5 ft bgs START: 12/18/2006 FINISH: 12/18/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.0/4.0		**Sand and Gravel mix (GW)**, trace clay, 2" layer of coarse limestone gravel.	Odor present.	3.2
2					2.0 ft bgs - Medium Silty Sand (SM), brown.		7
3							16.2
4							
5	4'-8'	2	2.0/4.0		4.0 ft bgs - some clay lenses present.	Odor present.	14
6					5.0 ft bgs - brown/yellow, trace clay and silt.		6
7							3
8						Groundwater @ 6.5 ft bgs	
9	8'-12'	3	1.4/4.0		8.0 ft bgs - Coarse Sand and Gravel (GW), grain size decreases with depth.		2.2
10					9.0 ft bgs - Medium Sand (SP), moist, brown/yellow.		1.4
11							2.6
12							
13	12'-16'	4	2.5/4.0		12.0 ft bgs - 1 ft bgs layer of medium to coarse sand with 0.25" to 1" gravel.		2.6
14							5.4
15							3.1
16							
17	16'-20'	5	2.5/4.0		16.0 ft bgs - Medium to Coarse Sand (SW), brown/gray, moist, trace silt, some subrounded to rounded 0.5" to 1" gravel.		3.2
18							9
19							4.5
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - Silty fine Sand (SM), gray/brown, wet.	Slight odor.	2.9
22							0.6
23							0.5
24							
25	24'-28'	7	2.5/4.0		24.0 ft bgs - increasing silt.		0.9
26					25.0 ft bgs - decreasing silt, gray/brown.		0.5
27							0.5
28							
29	28'-30'	8	2.0/2.0				1.1
30							1.6
31					30.0 ft bgs - Clay Till (CL), gray, hard, angular coarse gravel.		
32					**EOB @ 30.0 ft bgs**		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-234	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' North of SO-230

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5.0 ft bgs START: 12/18/2006 FINISH: 12/18/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.0/4.0		**Sand and Clay mix (SC)**, red/brown, 0.125" to 1" subrounded gravel.	Odor present.	14
2					1.5 ft bgs - Medium grained Sand (SP), brown.		29 12
3							
4							
5	4'-8'	2	2.6/4.0		4.0 ft bgs - Clay and Sand (SC), 0.5" to 1" well sorted rounded gravel, dark brown.	Odor present.	2.1 1.5
6					5.0 ft bgs - Coarse Sand (SP), some rounded 0.5" to 1" gravel, wet.	Groundwater @ 5.0 ft bgs	7
7							
8							
9	8'-12'	3	2.5/4.0		8.0 ft bgs - medium sand, brown/yellow.		23 29
10							322
11							
12							
13	12'-16'	4	3.0/4.0		12.0 ft bgs - 3" coarse sand lense.		3,212 2,517
14							2,055
15							
16							
17	16'-20'	5	2.4/4.0		16.0 ft bgs - gray/brown, some silt and trace 0.5" to 1.25" subrounded gravel.	Very strong odor.	9,999 9,999
18							9,999
19							
20							
21	20'-24'	6	2.3/4.0		20.0 ft bgs - Silty Fine Sand (SM), gray/brown, increasing silt with depth.	Slight odor.	9,999 798
22							2,400
23							
24							
25	24'-28'	7	2.4/4.0			Strong odor.	957 2,400
26							2,517
27							
28							
29	28'-32'	8	2.0/4.0		29.0 ft bgs - Clay Till (CL), stiff, gray.	Acetate liner is soft bgs	1,400 850 712
30							
31					**EOB @ 30.0 ft bgs**		
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-235	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: NE corner of paint room

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 4.0 ft bgs START: 12/19/2006 FINISH: 12/19/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	1.2/4.0		**Sand and Clay mix (SC)**, brown, dry, fine gravel.	Odor present.	1
2							1.1
3							
4							
5	4'-8'	2	0.4/4.0		4.0 ft bgs - 0.5" to 1" subrounded gravel, wet.	Odor present.	0.7
6							
7							
8							
9	8'-12'	3	2.0/4.0		8.0 ft bgs - Medium to Course Sand and Gravel (GW), rounded fine gravel.		22
10							87
11							81
12							
13	12'-16'	4	2.5/4.0		12.0 ft bgs - Medium Sand (SP), brown, trace 0.5" to 1" gravel.		101
14							62
15							117
16							
17	16'-20'	5	2.5/4.0		16.0 ft bgs - fine to medium grained sand, gray/brown, some fine gravel lenses, percentage of fine sand increases with depth.	Moderate odor.	199
18					18.0 ft bgs - wet.		152
19							162
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - percentage of silt increases with depth, moist.	Slight odor.	301
22							189
23							67
24							
25	24'-28'	7	2.5/4.0		24.0 ft bgs - Silty Fine Sand (SM), brownish-gray, wet.		161
26							302
27							241
28							
29	28'-32'	8	2.5/4.0		28.3 ft bgs - Silty Clay (CL), stiff. 28.5 ft bgs - Course Sand and Gravel with Clay (GW)		309
30							14.1
31					30.5 ft bgs - Clay Till (CL), stiff, gray.		11.1
32					**EOB @ 30.5ft bgs**		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-236	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 20' E of SO-224

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/19/2006 FINISH: 12/19/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.8/4.0		**Sand and Clay Mix (SC)**, red/brown, some gravel.	Odor present.	0
2					1.5 ft bgs - Medium to Course Sand (SP), brown/black, 0.25" to 1" subrounded gravel.		0
3							
4							
5	4'-8'	2	3.8/4.0			Odor present.	12.1
6					6.0 ft bgs - Sandy Silt (SM), black/brown, organic-rich soil.		2.2
7							2.1
8							
9	8'-12'	3	3.0/4.0		8.0 ft bgs - Medium Sand (SP), brown, with lenses of rounded to subrounded gravel.		25
10							102
11							59
12							
13	12'-16'	4	2.7/4.0		12.0 ft bgs - brown/gray, trace silt.		180
14					14.0 ft bgs - 3" to 4" wood fragment		119
15							250
16							
17	16'-20'	5	3.0/4.0				109
18					17.0 ft bgs - Coarse Sand and Gravel (SW), poorly sorted rounded to subrounded gravel.	Moderate odor.	515
19					18.0 ft bgs - Silty Fine Sand (SM), brown/gray.		87
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - 0.25" to 0.75" rounded gravel.	Slight odor.	27
22							84
23							303
24							
25	24'-28'	7	3.0/4.0				589
26							64
27					26.8 ft bgs - Gravel Mix (GW), coarse angular gravel. 27.0 ft bgs - Clay Till (CL), hard, gray.		59
28					**EOB @ 27.0 ft bgs**		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-237	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' S of SO-231

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/19/2006 FINISH: 12/19/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.5/4.0		**Medium to Coarse Sand and Clay mix (SC)**, red/brown, trace silt and gravel.	Odor present.	52
2							23
3							
4							
5	4'-8'	2	3.0/4.0		4.0 ft bgs - Silty Fine Sand (SM), brown/black.	Odor present.	127
6					5.0 ft bgs - Medium to Course Sand (SP), 0.75" to 1.25" rounded gravel lenses.		26
7							17
8							
9	8'-12'	3	2.5/4.0				25
10					9.5 ft bgs - 0.5" to 1" rounded gravel.		19
11							39
12							
13	12'-16'	4	2.5/4.0		12.3 ft bgs - fine to medium grained sand, brown, percentage of fine sand increases with depth.		69
14							33
15							98
16							
17	16'-20'	5	2.5/4.0		16.5 ft bgs - Silty Fine Sand (SM), brown/gray, trace fine gravel.		246
18							114
19							305
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - Fine to Medium Sand (SP), with some lenses of course sand.	Slight odor.	354
22							906
23					22.0 ft bgs - Silty Fine Sand (SM), brown/gray.		517
24							
25	24'-28'	7	2.0/4.0			Strong odor.	2511
26							714
27							1,298
28							
29	28'-30'	8	1.2/4.0		28.0 ft bgs - brown/black. 29.0 ft bgs - Clay Till (CL), hard, gray		2,402 797
30					**EOB @ 29.2 ft bgs**		
31							
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-238	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' E of SO-238

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/19/2006 FINISH: 12/19/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.5/4.0		**Sand and Clay mix (SC)**, red/brown, weathered, some fine gravel.	Odor present.	52
2							74
3					2.0 ft bgs - Silty Fine Sand (SM), stained black.		176
4							
5	4'-8'	2	1.8/4.0		4.5 ft bgs - Course Gravel (GW), angular, white.	Odor present.	54
6					5.0 ft bgs - Medium to Course Sand (SP), brown/black.		17
7							11
8							
9	8'-12'	3	2.0/4.0		8.0 ft bgs - Fine to Medium Sand (SP), brown, trace 0.5" to 1.5" gravel.		6
10							17
11							32
12							
13	12'-16'	4	3.0/4.0		12.0 ft bgs - lenses of course sand and fine gravel. 12.8 ft bgs - percentage of fine sand increase with depth.		55
14							62
15							114
16							
17	16'-20'	5	2.5/4.0				414
18							234
19							391
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - some silt, percentage of silt increases with dep	Slight odor.	910
22							730
23							2,600
24							
25	24'-28'	7	2.0/4.0		24.0 ft bgs - Silty Fine Sand (SM), brown/gray.	Strong odor.	3,824
26							1,389
27							2,574
28							
29	28'-30'	8	1.5/2.0		29.5 ft bgs - Clay Till (CL), hard, gray.	Strong odor.	3,300 3,600
30							215
31					**EOB @ 29.5 ft bgs**		
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-239	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' W of SO-231, 4' W of paint room wall

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/20/2006 FINISH: 12/20/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.7/4.0		**Medium Sand and Clay mix (SC)**, red/brown, 0.25" to 1.5" gravel, poorly sorted.	Odor present.	47
2							19
3							51
4							
5	4'-8'	2	3.0/4.0		4.3 ft bgs - Medium Sand (SP).	Odor present.	79
6					6.5 ft bgs - Course Sand and Fine Gravel (SW), average grain size increases with depth.		15
7							29
8							
9	8'-12'	3	2.5/4.0		8.2 ft bgs - Medium to Course Sand (SP), brown, grain size decreases with depth.		13
10							10
11							12
12							
13	12'-16'	4	2.4/4.0		12.0 ft bgs - fine to medium sand, trace 0.25" to 1" gravel.		30
14							29
15							92
16							
17	16'-20'	5	2.6/4.0		17.0 ft bgs - Course Sand and Fine Gravel (SW).	Slight odor.	111
18					17.5 ft bgs - Silty Fine Sand (SM), brown/gray.		205
19							102
20							
21	20'-24'	6	2.5/4.0		20.0 ft bgs - Medium to Course Sand (SP), brown. 21.0 ft bgs - Silty Fine Sand (SM), brown/gray.	Slight odor.	227
22							169
23							500
24							
25	24'-28'	7	2.2/4.0			Moderate odor.	1,487
26							451
27							389
28							
29	28'-30'	8	1.8/2.0		29.0 ft bgs - Course Sand, Gravel and Clay mix (GW) 29.6 ft bgs - Clay Till (CL) hard, gray.		389 210
30							57
31					**EOB @ 29.8ft bgs**		
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-240	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' N of SO-239

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/20/2006 FINISH: 12/20/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	1.3/4.0		**Course Sand, Gravel and Clay mix (GW)**, red/brown, 0.25" - 1" gravel.	Odor present.	13
2							162
3							
4							
5	4'-8'	2	3.2/4.0		4.2 ft bgs - Medium Sand (SP), brown/black. 4.8 ft bgs - Coarse Sand (SW), grades into fine gravel with depth, 0.125" - 1" rounded gravel.	Odor present.	123
6							61
7							8
8							
9	8'-12'	3	2.0/4.0		8.0 ft bgs - Medium Sand (SP), brown. 8.5 ft bgs - Coarse Sand (SW), some fine gravel. 9.2 ft bgs - Medium Sand (SP), brown.		7
10							20
11							9
12							
13	12'-16'	4	2.5/4.0				57
14					14.1 ft bgs - 3" silty clay lense, brown/black.		11
15							106
16							
17	16'-20'	5	2.3/4.0		16.0 ft bgs - fine to mediium sand, trace silt, gray/brown. 16.8 ft bgs - Fine Gravel (GM), rounded, fines into coarse sand with depth.		114
18							54
19							45
20							
21	20'-24'	6	2.6/4.0		20.0 ft bgs - Silty Fine Sand (SM), gray/brown, medium san increases with depth.	Slight odor.	10
22							14
23							71
24							
25	24'-28'	7	2.3/4.0		24.0 ft bgs - Silty Fine Sand (SM), gray/brown.		21
26							12
27							14
28							
29	28'-31'	8	2.2/3.0		28.6 ft bgs - 9" silty clay lense, soft bgs, brown. 29.5 ft bgs - Clay Till (CL), hard, gray.		87
30							22
31					**EOB @ 30.2 ft bgs**		9
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-241	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 25' E of SO-233

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/20/2006 FINISH: 12/20/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.5/4		**Sand and Clay mix (CL)** with some subangular gravel, reddish-brown	Odor present.	17
2							39
3							44
4							
5	4'-8'	2	3.0/4		4.3' rounded fine gravel 4.5' medium sand with 1-1.5" rounded gravel, black	Odor present.	21
6					5' Medium Sand (SP), brown, grain size increase with depth		12
7							10
8							
9	8'-12'	3	2.2/4				57
10							52
11							71
12							
13	12'-16'	4	2.6/4		12-14' fine rounded gravel lenses		173
14							139
15							128
16							
17	16'-20'	5	2.5/4				101
18					18' fine sand, brownish gray		114
19							67
20							
21	20'-24'	6	2.5/4		20' medium sand. brownish-black, coarse sand lenses	Slight odor.	198
22					21' Silty Fine Sand (SM), grayish-brown		8
23							7
24							
25	24'-28'	7	2.5/4				7
26							3
27							3
28							
29	28'-31'	8	2.2/3		28.5' soft bgs brown clay lense 29' Clay Till (CL), stiff, gray		7
30							3
31					**EOB @ 29.5 ft bgs**		2
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-242	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' E od SO 241

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/20/2006 FINISH: 12/20/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.3/4		**Sand and Clay mix (SC)**, reddish-brown	Odor present.	16
2					2' Medium Sand (SP), brown		39
3							23
4					4' clay lenses	Odor present.	10
5	4'-8'	2	2.5/4		5' Course Sand(SP), brown-black, some subrounded fine gravel		11
6							11
7							
8					**Medium Sand (SP)**		12
9	8'-12'	3	2.5/4		9' course sand and fine subrounded grave,l		52
10							73
11							
12							133
13	12'-16'	4	1.5/4		13' course sand and fine subrounded gravel, brownish-black		69
14							87
15							
16					16-18.5' some gravel lenses present		71
17	16'-20'	5	2.5/4				111
18							60
19							
20						Slight odor.	152
21	20'-24'	6	2.7/4		21' Fine Silty Sand (SM), brownish-gray		198
22							89
23							
24							90
25	24'-28'	7	2.1/4				76
26							108
27							
28							180
29	28'-32'	8	1.6/2		29.5' Clay Till (CL), stiff, gray		91
30					**EOB @ 29.6 ft bgs**		104
31							
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-243	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 20' S of SO-238

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: 5' START: 12/21/2006 FINISH: 12/21/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.4/4		**Sand and Clay mix (SC)**, reddish-brown, subangular fine to medium gravel	Odor present.	31
2							34
3					2' Medium Silty Sand (SM), black		21
4							
5	4'-8'	2	2.4/4		5' Medium Sand (SP), brown, lenses of coarse sand and fine gravel, damp	Odor present.	68
6							64
7							7
8							
9	8'-12'	3	2.5/4		8' coarse sand lense		41
10							39
11							34
12							
13	12'-16'	4	2.3/4		13' coarse sand and fine rounded gravel lense		200
14							65
15							57
16							
17	16'-20'	5	2.4/4		17' coarse sand lense		257
18							425
19							605
20							
21	20'-24'	6	3.0/4		**Fine Silty Sand (SM)**, brownish-gray	Slight odor.	830
22					21.5' Coarse Sand (SM), brownish-gray, some fine gravel and silt present		947
23							2117
24							
25	24'-28'	7	4.0/4		**Fine Silty Sand (SM)**, dark gray, wet		2421
26							9999
27							686
28							
29	28'-32'	8	1.9/3/2		29.5 Clay Till (CL), stiff, grey		1344
30							4105
31					**EOB @ 29.9ft bgs**		2120
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-244	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' S of SO-243; S of paint room S wall

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/21/2006 FINISH: 12/21/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	0.5/4		**Sand and Clay mix (SC)**, reddish-brown, some fine gravel present	Odor present.	8
2							
3							
4							
5	4'-8'	2	2.4/4		**Fine to Medium Silty Sand (SM)**, brownish-black 0.125"-1" gravel 5' wood fragment	Odor present.	26
6							25
7							12
8							
9	8'-12'	3	2.5/4		**Medium Sand (SP)**, brown, subrounded fine to medium gravel lenses		8
10							8
11							27
12							
13	12'-16'	4	2.6/4				43
14							125
15							175
16							
17	16'-20'	5	2.5/4		16' medium to coarse sand 17' fine to medium dand, brown	Slight odor	490
18							372
19							610
20							
21	20'-24'	6	2.1/4		fine to medium sand, brown, average grain size increases w depth to **Coarse Sand (SP)**	Slight odor.	898
22							1514
23							1491
24							
25	24'-28'	7	2.3/4		**Fine Silty Sand (SM)**, brownish-gray	Strong odor	4372
26							9999
27							1019
28							
29	28'-32'	8	2.3/4		**clay and gravel mix** 29.3' Clay Till (CL), stiff, gray		5100
30							1314
31					**EOB @ 29.3 ft bgs**		98
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-245	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 10' S of SO-244

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/21/2006 FINISH: 12/21/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	1.8/4		**Sand and Clay mix (SC)**, reddish-brown, subangular gravel	Odor present.	9
2					1.5' Medium to Coarse Silty Sand (SM), brownish-black		6
3							14
4							
5	4'-8'	2	1.7/4			Odor present.	24
6							16
7							10
8							
9	8'-12'	3	2.5/4		**Medium Sand (SP)**, brown, grades into coarse sand and fine gravel mix with depth		121
10							38
11							11
12							
13	12'-16'	4	2.9/4		12' rounded gravel lenses		123
14							125
15							188
16							
17	16'-20'	5	3.0/4		16 medium sand, brown, granding into Fine Sand (SP) with depth		388
18							174
19							384
20							
21	20'-24'	6	2.6/4		gravel lenses	Slight odor.	575
22					22' Fine Silty Sand (SM), gray		980
23							503
24							
25	24'-28'	7	2.3/4			Moderate odor	1310
26							1431
27							3003
28							
29	28'-31'	8	2.0/3		29.4 soft bgs clay lense, gray 29.7 Clay Till (CL) , stiff, gray	Moderate odor	6400 2513
30					**EOB @30.0 ft bgs**		901
31							
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-246	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 15' W of SO-245

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/21/2006 FINISH: 12/21/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL (FT)	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.2/4		**Sand and Clay mix (SC)**, reddish-brown, subangular gravel	Odor present.	23
2					2' Medium silty sand (SM), brownish-black		11
3							12
4							
5	4'-8'	2	2.7/4		5' Coarse gravel, angular white limestone	Odor present.	25
6					5.6 Coarse Sand (SP), brown, some fine subrounded gravel		19
7							26
8							
9	8'-12'	3	2.6/4		9' Medium Sand (SP), brown, fine/medium subrounded gravel present	Slight odor	41
10							75
11							27
12							
13	12'-16'	4	2.5/4		**Coarse Sand (SP)** with fine rounded gravel, grades into medium sand with depth		60
14							74
15							124
16							
17	16'-20'	5	2.5/4		**Medium Sand (SP)**, brown		201
18							130
19							285
20							
21	20'-24'	6	2.5/4		20' medium sand with small % of silt, brownish-gray	Slight odor.	868
22							960
23							1100
24							
25	24'-28'	7	2.6/4		**Fine Silty Sand (SM)**, gray	Strong odor	3511
26							2605
27							9999
28							
29	28'-31'	8	2.0/3		**29.5 coarse gravel and clay mix** 29.6 Clay Till (CL), stiff, gray	Strong odor	9000
30							2814
31					**EOB @30.0 ft bgs**		948
32							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
348136.TT.01	SO-247	SHEET 1 OF 1

SOIL BORING LOG

PROJECT: **OMC Plant 2** LOCATION: 18' W of SO-246

ELEVATION: DRILLING CONTRACTOR: **IPS**

DRILLING METHOD AND EQUIPMENT USED: **Geoprobe**

WATER LEVELS: START: 12/21/2006 FINISH: 12/21/2006 LOGGER: **K. Davis**

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	PID Reading (ppm)
1	0'-4'	1	2.3/4		**Sand and Clay mix (SC)**, reddish-brown, subangular gravel	Odor present.	15
2							21
3							9
4							
5	4'-8'	2	3.1/4		4.3' white angular limestone gravel and white silt 4.5' Coarse Sand (SP), brown, fine gravel lenses	Odor present.	11 11
6							21
7							
8							
9	8'-12'	3	2.5/4		8.3' medium sand, brown		27
10							43 26
11							
12							
13	12'-16'	4	2.8/4		Medium Sand (SP), brown, gravel lenses present, average grain size decreases with depth		34 44
14							99
15							
16							
17	16'-20'	5	2.6/4		16' fine subrounded gravel lenses		94 142
18							117
19							
20							
21	20'-24'	6	3.0/4		20' fine gravel lenses	Slight odor.	150 96
22					22' coarse sand and fine subrounded gravel		303
23							
24							
25	24'-28'	7	3.3/4		Fine Silty Sand (SM), gray		328 765
26							355
27							
28							
29	28'-31'	8	1.6/3		**29.4 Clay Till (CL), stiff, gray**		220 299
30					**EOB @ 29.6ft bgs**		238
31							
32							